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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/314,927	05/20/1999	TAKASHI KOBAYASHI	35.C13533	5816

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EXAMINER

MILLS, DONALD L

ART UNIT	PAPER NUMBER
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2662

DATE MAILED: 11/03/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Best Available Copy

Office Action Summary

Application No.

09/314,927

Applicant(s)

KOBAYASHI ET AL.

Examiner

Donald L. Mills

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 July 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,4-7,10,13-15,18 and 30-39 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,4-7,10,13-15,18 and 30-39 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1, 4, 5, 10, 18, 30, 31, 34, 38, and 39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cook et al. (USPN 5,504,757), hereinafter referred to as Cook, in view of EP 0697778 to Keshav et al., hereafter referred to as Keshav.

Regarding claims 1 and 18, Cook discloses a communication apparatus (a communication apparatus (see figure 1B)) comprising:

a) a communication unit having different transfer rates (a serial bus of the apparatus is capable of operating at multiple speeds (see figure 1B and abstract) and adapted to transmit a predetermined packet to all destination apparatuses using at least one of the different transfer rates (the method transmits packets to nodes using one of at least three speeds (see column 1 lines 42 through 57 and abstract); and

b) a control unit adapted to determine one of the different transfer rates as a maximum transfer rate between the communication apparatus and all of the destination apparatuses (the maximum rate between the nodes is determined (see column 7 line 34 through column 8 line 50 and figure 3)).

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Cook does not disclose that the apparatus determines the maximum transfer rate after receiving responses to the predetermined packet from all the destinations and a transmission to a plurality of destination apparatuses.

However, Keshav discloses a transmission rate adjustment system wherein a target rate is adjusted based on the acknowledgements received from all the destination nodes (see column 7 lines 34-43, column 9 line 55 through column 10 line 1, column 1 lines 12 and 13, abstract and claims 1-3)).

It would have been obvious to one skilled in the art at the time of the invention to implement this feature in the Cook system comprising a plurality of destination apparatuses because doing so would allow the system to verify availability of all network nodes (by-way-of the acknowledgements) before transmission takes place, thus making Cook more reliable. Furthermore, taking into account the acknowledgements from all destinations will make sure that the maximum speed is determined for communications with all the nodes. Note, Keshav discloses in column 9 line 55 through column 10 line 1 that for every data packet probe the source transmits there must be a corresponding acknowledgment received and also discloses in column 1 lines 12 and 13 that the processing system network, which is the network used to calculate the optimal rate, may consist of only two nodes (i.e. a source and a destination). Therefore, when the source receives the acknowledgement from the destination, in the two-node network configuration, this can be considered receiving 'responses transmitted from all of the destination nodes' as recited in the claim (i.e. the total number of destination nodes is one and the source receives the acknowledgment from that node to optimize the data rate).

Regarding claims 4 and 30, Cook discloses the system discussed above.

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Cook does not disclose that if the response is absent, retransmitting the packet at the previous rate. However, Keshav discloses of a communication unit that retransmits a predetermined packet at a transfer rate lower than the previous transfer rate, if at least one response is absent (an acknowledgment is not received the packet is retransmitted at a decreased set point rate (see column 8 lines 1-22) (see column 10)).

It would have been obvious to one skilled in the art at the time of the invention to implement this feature into the Cook system because if the acknowledgment is not received than that would indicate that there are problems with the transmission to the destination such as the destination being congested or unavailable. Therefore, retransmitting the packet a lesser rate will help prevent further congestion of the destination node or any intervening nodes along the path to the destination, thereby making Cook more reliable.

Regarding claims 5 and 31, Cook discloses the system discussed above. Furthermore, Cook discloses that the communication unit transmits data to the destination apparatuses at the maximum transfer rate after discriminating the maximum transfer rate (when the maximum rate is determined, that rate is used to transmit the data (see column 7 lines 24-50)), wherein the transmitting step includes a step of packetizing data into at least one packet and broadcasting each packet to the destination apparatuses (the apparatus communicates using data packets (see abstract)).

Regarding claims 10 and 34, Cook discloses the system discussed above. Furthermore, Cook discloses that the communication unit conforms to an IEEE 1394 standard (the apparatus uses the IEEE 1394 standard (see abstract)).

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Regarding claims 38 and 39, Cook discloses the system discussed above. Furthermore, Cook discloses that the communications unit has an isochronous transfer mode and an asynchronous transfer mode (the apparatus operating in both the asynchronous transfer mode and isochronous transfer mode (see abstract)), and is adapted to transmit the predetermined packet to all of the destinations using the asynchronous transfer mode (the apparatus transfers packets using the asynchronous transfer mode (see column 1 lines 42-57 and abstract)).

3. Claims 6 and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cook in view of Keshav and further in view of Pflaumer (USPN 4,884,266), hereafter referred to as Pflaumer.

Regarding claims 6 and 32, Cook discloses the system discussed above. Furthermore, Cook discloses that the communication unit packetizes data into at least one packet (the apparatus communicates using data packets (see abstract)).

Cook does not disclose that the system broadcasts each packet to the destination apparatus.

However, Pflaumer discloses a system wherein data packets are broadcast to destination nodes (see column 6)). Since the packets are broadcast, there is no need for determining which of the destination nodes is to receive the packet (i.e. they will all receive the packet) and therefore there is less processing time needed.

It would have been obvious to one skilled in the art at the time of the invention to implement this feature in Cook because doing so would allow Cook to operate faster.

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4. Claims 7 and 33 rejected under 35 U.S.C. 103(a) as being unpatentable over Cook in view of Keshav and further in view of Sheller et al. (USPN 5,010,553), hereinafter referred to as Sheller.

Regarding claims 7 and 33, Cook discloses the system discussed above.

Cook does not disclose that the maximum rate is used to determine the amount of data in the packets, which can vary based on the maximum rate.

However, Sheller discloses a system wherein the size of variable size packets is determined based on a data rate (see column 3).

It would have been obvious to one skilled in the art at the time of the invention to have the packet size vary depending on the determined maximum transfer rate since higher rates will allow bigger packets to be transmitted and lower rates will allow only smaller packets to be transmitted. Therefore, adjusting the packet size according to the transfer rate will make the system of Cook operate more efficiently and adaptive to the maximum speed it determines.

5. Claims 13, 14, 35 and 36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cook in view of Keshav and further in view of Terada et al. (USPN 6,167,046), hereafter referred to as Terada.

Regarding claims 13, 14, 35 and 36 Cook discloses the system discussed above.

Cook does not disclose that the predetermined packet includes a command that inquires of an ability of the destinations or information about ability of the communication/destination apparatus.

However, Terada discloses a communication system wherein ability inquiries, in the form of packets, are made and stored between the nodes of the network (see column 3 lines 10-16).

It would have been obvious to one skilled in the art at the time of the invention to include such information in messages communicated between the source and destination nodes of Cook, for many reasons. One such reason would be that knowing each other's abilities would allow more versatile communication to take place. Namely, knowing that each can properly receive and process real-time data will allow such data to be communicated between the source and the destination. Another reason would be to determine if the source and destination could perform certain types of error correction. All of which would make the system of Cook more robust and reliable.

6. Claims 15 and 37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cook, in view of Keshav and further in view of Watanabe et al. (USPN 6,246,665), hereafter referred to as Watanabe.

Regarding claims 15 and 37, Cook discloses the system discussed above.

Cook does not disclose that the predetermined packet includes a connection ID indicating a logical connection relationship between the communication apparatus and all of the plurality of destination apparatuses.

However, Watanabe discloses a system wherein logical connection IDs are used (see figures 33 and 34).

It would have been obvious to one skilled in the art at the time of the invention to include logical connection IDs in the system of Cook, because doing so would allow the destination to

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know how and where to locate the source and vice versa) and thus properly send the packets back and forth between them, thereby making Cook more reliable.

Response to Arguments

7. Applicant's arguments with respect to claims 1, 4-7, 10, 13-15, 18 and 30-39 have been considered but are moot in view of the new ground(s) of rejection.

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Conclusion

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Donald L. Mills whose telephone number is 571-272-3094. The examiner can normally be reached on 8:00 AM to 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hassan Kizou can be reached on 571-272-3088. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Donald L Mills



October 27, 2005



**JOHN PEZZLO
PRIMARY EXAMINER**

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